

C.S.B. / B1

1. (Once Amended) An optical network system comprising:
a data service hub;
at least one optical tap for dividing a downstream optical signal between one or more subscribers of the optical network system;
at least one subscriber optical interface connected to the optical tap for receiving the downstream optical signal from and sending upstream optical signals to the at least one optical tap;
a laser transceiver node disposed between the data service hub and the optical tap, for communicating optical signals between the data service hub and the optical tap, and for apportioning bandwidth that is shared between groups of subscribers connected to a respective optical tap of the optical network system, and
one or more optical waveguides connected between respective optical taps and the laser transceiver node, for carrying the upstream optical signals and the downstream optical signals, whereby the number of the waveguides is minimized while optical bandwidth for subscribers is controllable by the laser transceiver node in response to subscriber demand use.

2. (Once Amended) The optical network system of claim 1, wherein the laser transceiver node further comprises:
at least one multiplexer coupled to an optical tap routing device;
at least one optical transmitter connected to the at least one multiplexer, for transmitting downstream optical signals received from the data service hub to at least one subscriber optical interface of the optical network system; and
at least one optical receiver connected to the at least one multiplexer, for receiving and converting upstream optical signals from at least one subscriber optical interface of the optical network system.

~~4. (Once Amended) The optical network system of claim 3, wherein the laser transceiver node further comprises at least one diplexer connected to the at least one optical transmitter and optical receiver, each diplexer combining downstream RF modulated optical signals received from the data service hub with the downstream optical signals, each diplexer being connected to a respective optical waveguide.~~

B3 sub 7 13. (Once Amended) The optical network system of claim 12, wherein one of the protocols comprises a time division multiple access protocol.

50 CO 21. (Once Amended) An optical network system comprising:
a data service hub;
at least one optical tap for dividing a downstream optical signal between one or more subscribers of the optical network system;
at least one subscriber optical interface connected to the optical tap for receiving the downstream optical signal from and sending upstream optical signals to the at least one optical tap;
a laser transceiver node disposed between the data service hub and the at least one subscriber optical interface, for communicating optical signals between the data service hub and the optical tap, and for apportioning bandwidth that is shared between groups of subscribers connected to a respective optical tap of the optical network system, at least one optical tap being disposed within the laser transceiver node, and
one or more optical waveguides connected between respective optical taps and the laser transceiver node, for carrying the upstream optical signals and the downstream optical signals, whereby the number of the waveguides is minimized while optical bandwidth for subscribers is controllable by the laser transceiver node in response to subscriber demand.

B4